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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,575

07/24/2006

Kalyan Sehanobish

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109 7590 03/09/2009

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
Midland, MI 48641-1967

EXAMINER

CHAN, SING P

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

03/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,575	Applicant(s) SEHANOBISH ET AL.	
	Examiner SING P. CHAN	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, 18, 19 and 21-26 is/are rejected.
- 7) ☐ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/14/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-16, 18, 19, and 21-26, drawn to a method of joining a substrate.

Group II, claim(s) 17, drawn to a method to repair a new or existing substrate.

Group III, claim(s) 20, drawn to a substrate.

2. The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature of providing an effective amount of a curable one or two part adhesive composition with an effective amount of organoborane amine complex initiator and one or more monomers, oligomers, polymers capable of polymerization by free radical polymerization is known as shown by Sonnenschein et al (U.S. 2002/0058764), which provide an effective amount of organoborane amine complex and polymerizable compound or monomers, oligomers, and polymers (Paragraphs 14-46). Therefore, the special technical features do not further prior art and provided a lack of special technical features.

3. During a telephone conversation with James T. Hoppe on February 27, 2009 a provisional election was made with traverse to prosecute the invention of group I, claims 1-16, 18, 19, and 21-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17 and 20 are withdrawn from further

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consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. The examiner has required restriction between product and process claims.

Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the

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above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 and 9-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,713,578.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 9-11 are generic to the method of claims 1-19 of U.S. Patent No. 6,713,578. That is, claims 1-19 of U.S. Patent No. 6,713,578 falls entirely within the scope of claims 1 and 9-11, or in other words, claims 1 and 9-11 are

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anticipated by claims 1-19 of U.S. Patent No. 6,713,578. Specifically, the cited organoborane/amine complexes are a species of the generic category of organoborane amine complex initiators.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3-7, 9-11, 13-16, 18, 19, 21, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Sonnenschein et al (U.S. 2002/0033227).

Regarding claims 1, 9-11, Sonnenschein et al discloses a method of bonding substrate. The method includes providing adhesive components, mixing the components, applying the adhesive to either one or both surfaces of the substrates, mating the substrates together and held with metal binder clips (Paragraph 77), wherein the adhesive components includes organoborane amine complex with the cited structures and polymerizable compound such as monomers, oligomers, polymers (Paragraphs 15-48)

Regarding claims 3-7, Sonnenschein et al discloses the material bondable includes polymer, wood, ceramics, concrete, glass, primed metal, polyethylene, polypropylene, polyethyleneterephthalate, and polytetrafluoroethylene (Paragraph 67)

Regarding claims 13-14, Sonnenschein et al discloses the adhesive includes acrylate tipped polyurethane prepolymers, which are formed by reacting an isocyanate with a reactive acrylate (Paragraph 48).

Regarding claims 15, 16, 18, and 19, Sonnenschein et al discloses the adhesive composition includes water (Paragraph 70), which inherently would provide a VOC emission of less than 650 or 270 g/l.

Regarding claims 21 and 22, Sonnenschein et al discloses applying pressure to join the substrate together and displacing composition exposed to air and begun to react (Paragraph 57), which inherently begun to develop green strength prior to joining.

Regarding claims 23 and 24, Sonnenschein et al discloses the composition can be either one or tow part composition (Paragraph 55).

10. Claims 1, 3-7, 9-11, 13-16, 18, 19, 21, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Sonnenschein et al (U.S. 2002/0058764).

Regarding claims 1, 9-11, Sonnenschein et al discloses a method of bonding substrate. The method includes providing adhesive components, mixing the components, applying the adhesive to either one or both surfaces of the substrates, mating the substrates together and held with metal binder clips (Paragraph 73), wherein the adhesive components includes organoborane amine complex with the cited structures and polymerizable compound such as monomers, oligomers, polymers (Paragraphs 14-46)

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Regarding claims 3-7, Sonnenschein et al discloses the material bondable includes polymer, wood, ceramics, concrete, glass, primed metal, polyethylene, polypropylene, polyethyleneterephthalate, and polytetrafluoroethylene (Paragraph 63)

Regarding claims 13-14, Sonnenschein et al discloses the adhesive includes acrylate tipped polyurethane prepolymers by reacting an isocyanate with a reactive acrylate (Paragraph 46).

Regarding claims 15, 16, 18, and 19, Sonnenschein et al discloses the adhesive composition includes water (Paragraph 66), which inherently would provide a VOC emission of less than 650 or 270 g/l.

Regarding claims 21 and 22, Sonnenschein et al discloses applying pressure to join the substrate together and displacing composition exposed to air and begun to react (Paragraph 54), which inherently begun to develop green strength prior to joining.

Regarding claims 23 and 24, Sonnenschein et al discloses the composition can be either one or two part composition (Paragraph 52).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 2, 8, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnenschein et al (U.S. 2002/0033227) as applied to claim 1 above, and further in view of Coglianese et al (U.S. 3,726,754).

Regarding claims 2 and 8, Sonnenschein et al as disclosed above is silent as to the substrate is a roofing membrane. However, bonding objects onto a roofing membrane is well known and conventional as shown for example by Coglianese et al. Coglianese et al discloses a method of forming a laminated roof construction. The method includes bonding a roofing membrane (14) formed of thermoplastic material such as polyvinyl chloride, polycarbonate, acrylonitrile-butadiene-styrene, stabilized polyolefins, or polyvinyl chloride-polyacrylate alloys, to a roof deck with adhesive (16), (Col 1, line 60 to Col 2, line 3), bonding a heat insulating layer foam polymer (20) sandwiched between two skin layers (22 and 24), which the skin layers are formed of either dimensionally stable polymeric film such as fluoroplastic coated on metal foil, paper, or polytetrafluoroethylene, fluorinated ethylene-propylene, chlorotrifluoroethylene, polyvinylidene-fluoride as well as polyvinyl chloride (Col 2, lines 6-31), which provided the teaching the skin layers can be either the same or different from the roofing membrane, which are all interchangeable. Furthermore, one of ordinary skill in the art reading Sonnenschein et al and Coglianese et al would appreciate the adhesive of Sonnenschein et al can be used as the adhesive for bonding

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the roofing membrane and the insulation layer of Coglianesse et al since the adhesive of Sonnenschein et al is capable of bonding to any material such as polymers, wood, ceramics, concrete, glass, and primed metal (See Sonnenschein et al, Paragraph 67) and the adhesive being thermally stable and will undergo polymerization when the user desires (Sonnenschein et al, Paragraph 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the adhesive of Sonnenschein et al for bonding the roofing membrane and insulation of Coglianesse et al to provide the adhesive being thermally stable and will undergo polymerization when the user desires (See Sonnenschein et al, Paragraph 10).

Regarding claims 25 and 26, Sonnenschein et al is silent as to ensuring the surfaces of the substrate and object are free of water or oil prior to applying the adhesive. However, one of ordinary skill in the art would appreciate cleaning the surface any surfaces prior to bonding. Therefore, it would be logical to clean the surfaces of any substrate and object to ensure the surfaces are free of dirt, water, oil or any other material that may interfere with proper bonding or joining of the surfaces.

It would have been obvious to one of ordinary skill in the art at time the invention was made to logically clean any surfaces to be joined to ensure dirt, water, oil or contaminate free surfaces in the method of Sonnenschein et al as modified by Coglianesse to ensure a strong join between the surfaces.

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14. Claims 2, 8, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnenschein et al (U.S. 2002/0058764) as applied to claim 1 above, and further in view of Coglianese et al (U.S. 3,726,754).

Regarding claims 2 and 8, Sonnenschein et al as disclosed above is silent as to the substrate is a roofing membrane. However, bonding objects onto a roofing membrane is well known and conventional as shown for example by Coglianese et al. Coglianese et al discloses a method of forming a laminated roof construction. The method includes bonding a roofing membrane (14) formed of thermoplastic material such as polyvinyl chloride, polycarbonate, acrylonitrile-butadiene-styrene, stabilized polyolefins, or polyvinyl chloride-polyacrylate alloys, to a roof deck with adhesive (16), (Col 1, line 60 to Col 2, line 3), bonding a heat insulating layer foam polymer (20) sandwiched between two skin layers (22 and 24), which the skin layers are formed of either dimensionally stable polymeric film such as fluoroplastic coated on metal foil, paper, or polytetrafluoroethylene, fluorinated ethylene-propylene, chlorotrifluoroethylene, polyvinylidene-fluoride as well as polyvinyl chloride (Col 2, lines 6-31), which provided the teaching the skin layers can be either the same or different from the roofing membrane, which are all interchangeable. Furthermore, one of ordinary skill in the art reading Sonnenschein et al and Coglianese et al would appreciate the adhesive of Sonnenschein et al can be used as the adhesive for bonding the roofing membrane and the insulation layer of Coglianese et al since the adhesive of Sonnenschein et al is capable of bonding to any material such as polymers, wood, ceramics, concrete, glass, and primed metal (See Sonnenschein et al, Paragraph 63)

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and the adhesive being thermally stable and will undergo polymerization when the user desires (Sonnenschein et al, Paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the adhesive of Sonnenschein et al for bonding the roofing membrane and insulation of Coglianese et al to provide the adhesive being thermally stable and will undergo polymerization when the user desires (See Sonnenschein et al, Paragraph 10).

Regarding claims 25 and 26, Sonnenschein et al is silent as to ensuring the surfaces of the substrate and object are free of water or oil prior to applying the adhesive. However, one of ordinary skill in the art would appreciate cleaning the surface any surfaces prior to bonding. Therefore, it would be logical to clean the surfaces of any substrate and object to ensure the surfaces are free of dirt, water, oil or any other material that may interfere with proper bonding or joining of the surfaces.

It would have been obvious to one of ordinary skill in the art at time the invention was made to logically clean any surfaces to be joined to ensure dirt, water, oil or contaminate free surfaces in the method of Sonnenschein et al as modified by Coglianese to ensure a strong join between the surfaces.

Allowable Subject Matter

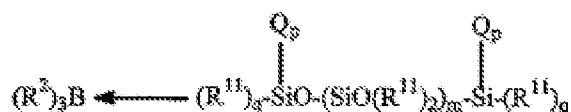
15. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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16. The following is a statement of reasons for the indication of allowable subject matter: The claims recite a method of joining substrate and an object together. The method for joining a substrate having a first surface to an object having a second surface includes the steps of: (i) applying an effective amount of a curable adhesive composition to the first surface of the substrate, the second surface of the object or to both surfaces, wherein the adhesive comprises (a) an effective amount of a organoborane amine complex initiator and (b) one or more monomers, oligomers, polymers or mixtures thereof having olefinic unsaturation which is capable of polymerization by free radical polymerization and (ii) contacting the first surface of the substrate with the second surface of the object. Wherein the organoborane amine complex initiator includes organoborane amino siloxane complexes with the structure



or



both Sonnenschein et al '764 and Sonnenschein et al '227 do not disclose the used of organoborane amino siloxane complexes. A search of the prior art of record did not discloses reference or references in combination with recited feature.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SING P. CHAN whose telephone number is (571)272-

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1225. The examiner can normally be reached on Monday-Thursday 7:30AM-11:00AM and 12:00PM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on 571-272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sing P Chan/
Acting Examiner of Art Unit 1791